Rotel RA-1570
RS232 ASCII Controller Command List

Date	Version	Update Description
June 13, 2013	1.00	Original Specification
July 16, 2013	1.10	Change to remove prefix requirement – requires Main Software V1.1.8 and later
January 17, 2014	1.20	Added Tone Control, Display Update Commands – Requires Main Software V1.2.9 and later
June 4, 2014	1.30	Added special character mapping
April 30, 2015	1.40	New get_mute_status command added with Main Software V1.3.8

The RA-1570 supports an ASCII based RS232 protocol. The RS232 hardware does not support flow control so care needs to be take when sending and receiving data to avoid packet loss.

The below protocol is effective starting with the Main software version V1.1.8.

All commands sent to the attached Rotel device must have a terminating "!" character.

Example Command: power_on!

Note: *Do not include any spaces in the command, and do not include a carriage return or line feed after the command, only the "!" terminating character.*

Status information from the attached Rotel product with either have a terminating "!" character or a byte count for variable length text data that may include a "!" in the returned message. It is up to the sending/receiving control application to properly parse and process the packets.

Note: *The byte count only includes the text data and not the length or "," character.*

Note about Rotel Link RCD feature: *The input that has been selected for the ROTEL LINK RCD option in the setup menu of the RA-1570 will affect the response string from the unit for that input. If the input has been set as the Rotel Link RCD input, the response string for that input will be the second string listed in the table (i.e. if COAX1 has been set as the Rotel Link RCD input, the response string will be source=coax1_cd! rather than the standard response string of source=coax1!).*

Connection Settings

Baud Rate	Parity	Valid Data Bits	Stop Bit Value	Handshaking	Data Type
115200	N	8	1	None	String

Communication Protocol

Command and response messages are included on the following pages. Automatic display update information can be enabled/disabled using the "display_update_auto" and "display_update_manual" on units with Main Software V1.2.9 or later installed.

In automatic mode each time the display changes the new display line(s) will be sent. In manual mode the display updates must be requested each time a refresh of the display information is desired. This primarily applies to Front USB metadata information. Basic status information such as volume, power or source changes will still be provided automatically.

Section 1: Control Command List

RA-1570 ASCII	Command Description	Unit Response
POWER & VOLUME COMMANDS		
power_on!	Power On	power=on!
power_off!	Power Off	power=standby!
power_toggle!	Power Toggle	power=on/standby!
volume_up!	Volume Up	volume=##!
volume_down!	Volume Down	volume=##!
volume_max!	Set Volume to Max	volume=max!
volume_min!	Set Volume to Min	volume=min!
volume_n!	Set Volume to level n (n = 1 - 86)	volume=##!
mute!	Mute Toggle	mute=on/off!
mute_on!	Mute On	mute=on!
mute_off!	Mute Off	mute=off!
SOURCE SELECTION COMMANDS		
cd!	Source CD	source=cd! / source=analog_cd!
coax1!	Source Coax 1	source=coax1! / source=coax1_cd!
coax2!	Source Coax 2	source=coax2! / source=coax2_cd!
opt1!	Source Optical 1	source=opt1!
opt2!	Source Optical 2	source=opt2!
aux1!	Source Aux 1	source=aux1!
aux2!	Source Aux 2	source=aux2!
tuner!	Source Tuner	source=tuner!
phono!	Source Phono	source=phono!
usb!	Source Front USB	source=usb!
pc_usb!	Source PC-USB	source=pc_usb!
bal_xlr!	Source XLR	source=bal_xlr! / source=bal_xlr_cd!

RA-1570 ASCII	Command Description	Unit Response
rcd!	Source Rotel CD	source=analog_cd! / source=coax1_cd! / source=coax2_cd! / source=bal_xlr_cd!
SOURCE CONTROL COMMANDS		
play!	Play Source	play_status=play!
stop!	Stop Source	n/a
pause!	Pause Source	n/a
track_fwd!	Track Forward/Tune Up	n/a
track_back!	Track Backward/Tune Down	n/a
fast_fwd!	Fast Forward/Search Forward	n/a
fast_back!	Fast Backward/Search Backward	n/a
random!	Random Play Mode Toggle	n/a
repeat!	Repeat Play Mode Toggle	n/a
MENU CONTROL COMMANDS		
menu!	Display the Menu	n/a
exit!	Exit Key	n/a
up!	Cursor Up	n/a
down!	Cursor Down	n/a
left!	Cursor Left	n/a
right!	Cursor Right	n/a
enter!	Enter Key	n/a
NUMERIC KEY COMMANDS		
1!	Number Key 1	n/a
2!	Number Key 2	n/a
3!	Number Key 3	n/a
4!	Number Key 4	n/a
5!	Number Key 5	n/a
6!	Number Key 6	n/a
7!	Number Key 7	n/a
8!	Number Key 8	n/a
9!	Number Key 9	n/a
0!	Number Key 0	n/a
TONE CONTROL COMMANDS		
tone_on!	Tone Controls On	tone=on!
tone_off!	Tone Controls Off	tone=off!
bass_up!	Bass Up	bass=000/+##/-##!
bass_down!	Bass Down	bass=000/+##/-##!
bass_-10!	Set Bass to -10	bass=-10!
bass_000!	Set Bass to 0	bass=000!
bass_+10!	Set Bass to +10	bass=+10!
treble_up!	Treble Up	treble=000/+##/-##!
treble_down!	Treble Down	treble=000/+##/-##!

RA-1570 ASCII	Command Description	Unit Response
treble_-10!	Set Treble to -10	treble=-10!
treble_000!	Set Treble to 0	treble=000!
treble_+10!	Set Treble to +10	treble=+10!
BALANCE CONTROL COMMANDS		
balance_right!	Balance Right	balance=000/L##/R##!
balance_left!	Balance Left	balance=000/L##/R##!
balance_L15!	Set Balance to Max Left	balance=L15!
balance_000!	Set Balance to 0	balance=000!
balance_R15!	Set Balance to Max Right	balance=R15!
SPEAKER OUTPUT COMMANDS		
speaker_a!	Toggle Speaker A Output	speaker=a/a_b/off!
speaker_b!	Toggle Speaker A Output	speaker=b/a_b/off!
OTHER COMMANDS		
dimmer!	Toggle display dimmer	dimmer_#!
dimmer_0!	Set display to brightest setting	n/a
dimmer_1!	Set display to dimmer level 1	n/a
dimmer_2!	Set display to dimmer level 2	n/a
dimmer_3!	Set display to dimmer level 3	n/a
dimmer_4!	Set display to dimmer level 4	n/a
dimmer_5!	Set display to dimmer level 5	n/a
dimmer_6!	Set display to dimmest setting	n/a
pcusb_class_1!	Set PC-USB Audio Class to 1.0	pcusb_class=1!
pcusb_class_2!	Set PC-USB Audio Class to 2.0	pcusb_class=2!
DISPLAY REFRESH COMMANDS		
display_update_auto!	Set Display Update to Auto	display_update=auto!
display_update_manual!	Set Display Update to Manual	display_update=manual!

Section 2: Feedback Request Command List

Command:	get_display!
Description:	Request the entire display to be sent
Return String:	display=###,text
Return Description:	Current display data; must include 3 digit length of text string at beginning followed by "," and text string (no terminating character)
Example:	display=040, Sample Text

Command:	get_display1!
Description:	Request display line #1 to be sent
Return String:	display1=##,text
Return Description:	Current display line 1, must include 2 digit length of text string at beginning followed by "," and text string (no terminating character)
Example:	display1=20, Sample Text

Command:	get_display2!
Description:	Request display line #2 to be sent
Return String:	display2=##,text
Return Description:	Current display line 2, must include 2 digit length of text string at beginning followed by "," and text string (no terminating character)
Example:	display2=20, Sample Text

Command:	get_product_type!
Description:	Request the product type
Return String:	product_type=##,text
Return Description:	Rotel product type name, must include 2 digit length of text string at beginning followed by "," and text string (no terminating character)
Example:	product_type=07,RC-1570

Command:	get_product_version!
Description:	Request the main CPU software version
Return String:	product_version=##,text
Return Description:	Rotel main CPU software version, must include 2 digit length of text string at beginning followed by "," and text string (no terminating character)
Example:	product_version=06,V1.1.8

Command:	get_tc_version!
Description:	Request the front USB software version
Return String(s):	tc_version=##,text
Return Description:	Rotel front USB software version, must include 2 digit length of text string at beginning followed by "," and text string (no terminating character)
Example:	product_version=06,V500BT

Command:	get_display_size!
Description:	Request display size (Requires Main Software V1.2.9 or later)
Return String:	display_size=##,##!
Return Description:	Columns and rows on current display
Example:	display_size=20,04!

Command:	get_display_update!
Description:	Request display update (Requires Main Software V1.2.9 or later)
Return String(s):	display_update=auto! / display_update=manual!
Return Description:	Status of if the display refresh is automatic or manual
Example:	display_update=auto!

Command:	get_current_power!
Description:	Request current power status
Return String(s):	power=on! / power=standby!
Return Description:	Current power status
Example:	power=on!

Command:	get_current_source!
Description:	Request current source
Return String(s):	source=analog_cd! / source=cd! / source=coax1! / source=coax1_cd! / source=coax2! / source=coax2_cd! / source=opt1! / source=opt2! / source=tuner! / source=phono! / source=usb! / source=pc_usb! / source=aux1! / source=aux2! / source=bal_xlr!
Return Description:	Current source
Example:	source=pc_usb!

Command:	get_tone!
Description:	Request current tone control state
Return String(s):	tone=on! / tone=off!
Return Description:	Current tone control state
Example:	tone=off!

Command:	get_bass!
Description:	Request current bass level
Return String(s):	bass=###! (+01-10, -01-10, 000)
Return Description:	Current tone control bass level
Example:	bass=+02!

Command:	get_treble!
Description:	Request current treble level
Return String(s):	treble=###! (+01-10, -01-10, 000)
Return Description:	Current tone control treble level
Example:	treble=-01!

Command:	get_balance!
Description:	Request current balance setting
Return String(s):	balance=###! (L01-15, R01-15, 000)
Return Description:	Current balance setting
Example:	balance=L03!

Command:	get_pcusb_class!
Description:	Request current PC-USB class
Return String(s):	pcusb_class=1! / pcusb_class=2!
Return Description:	Current PC-USB class
Example:	pcusb_class=1!

Command:	get_current_freq!
Description:	Request current frequency for digital source input
Return String(s):	freq=off! / freq=32! / freq=44.1! / freq=48! / freq=88.2! / freq=96! / freq=176.4! / freq=192!
Return Description:	Current frequency for digital source input
Example:	freq=48!

Command:	get_volume_max!
Description:	Request Max volume value
Return String(s):	volume_max=##!
Return Description:	2 digit volume max level
Example:	volume_max=80!

Command:	get_volume_min!
Description:	Request Min volume value
Return String(s):	volume_min=0!
Return Description:	2 digit volume min level
Example:	volume_min=0!

Command:	get_volume!
Description:	Request current volume value
Return String(s):	volume=##!
Return Description:	2 digit current volume level
Example:	volume=40!

Command:	get_play_status!
Description:	Request play status (front USB source)
Return String(s):	play_status=play! / play_status=stop! / play_status=pause!
Return Description:	Source play status
Example:	play_status=play!

Command:	get_current_speaker!
Description:	Request active speaker outputs
Return String(s):	speaker=off! / speaker=a! / speaker=b! / speaker=a_b!
Return Description:	Active speaker outputs
Example:	speaker=a!

Command:	get_tone_max!
Description:	Request Max Tone value
Return String(s):	tone_max=10!
Return Description:	2 digit tone max level
Example:	tone_max=10!

Command:	get_mute_status!
Description:	Request current mute status. (Requires Main Software V1.3.8 or later)
Return String(s):	mute=off! / mute=on!
Return Description:	Current mute state
Example:	mute=on!

Section 3: Special Character Mapping

Certain characters on the RA-1570 display may be represented by a combination of 2-3 hex bytes in the feedback string provided by the unit. Refer to the chart below for a mapping of the different characters.

Symbol	Hex Value	Symbol	Hex Value	Symbol	Hex Value
A	EE 82 85	D	EE 82 8A		EE 82 99
C	EE 82 84		EE 82 8B		EE 82 9A
F	EE 82 92		EE 82 81		EE 82 88
G	EE 82 87	►	EE 82 82		EE 82 95
I	EE 82 8E	■	EE 82 83		EE 82 96
L	EE 82 89	◄	EE 82 94	*	EE 82 90
M	EE 82 93	►	EE 82 97		EE 82 91
R	EE 82 8C	◄	EE 82 98	Z	EE 82 8D
S	EE 82 8F	T	EE 82 80	END	EE 80 80 EE 80 81 EE 80 82